CLAIMS LISTING – MARKED-UP VERSION
Appl. No.:   10/648,301
Filing Date: 08/27/2003
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CLAIM 1 (currently amended)

A method of displaying three-dimensional vector orientations <u>and intensities</u> on a

two-dimensional surface comprising:

     i.   the steps of:

         a.   Collecting said three-dimensional information,

         b.   Transforming said three-dimensional Cartesian information to spherical co-ordinates,

         c.   Assigning a predetermined display pattern to said spherical co-ordinates, and

         d.   ~~Plotting~~ <u>Illustrating a visual rendition of</u> said predetermined display pattern on said two-dimensional ~~display~~<u>surface</u>,

     ii.   a step of calibrating said three-dimensional information,

     iii.   a method for rapidly and visually determining the orientation <u>and intensity</u> of ~~3D~~<u>3 dimensional</u> vectors within a vector field,

     iv.   a method of rapidly visually correlating ~~3D~~<u>3 dimensional</u> vectors of a common orientation<u> and intensity</u>,

     v.   a method for rapidly isolating specific vector orientations and determining their exact co-ordinate location,

vi.   a method for quickly displaying a scattergram of orientations <u>and</u> <u>intensities</u> within a specified study area or volume,

vii.   a method of enhancing the visual discrimination of subtle variation in vector orientation <u>and intensity,</u>

viii.   a methodology of presenting data that allows for the ability to incorporate rapid color change to the pixelated or voxelated image, allowing for a time varying display hence providing the user the ability to visualize slow time, real time or fast time visualization of the individual vector orientations <u>and intensities</u> within a dynamically changing vector ~~field,~~<u>field.</u>

CLAIM 2 (currently amended)

The method of Claim 1 wherein said step of ~~-~~<u>illustrating a visual rendition of vector orientations and intensities</u> ~~plotting~~ comprises the steps of:

i.   transmitting said predetermined display pattern to a ~~plotter~~<u>visualization device,</u>

ii.   displaying said spherical co-ordinates corresponding to said display pattern on said two-dimensional display,

CLAIM 3 (original)

The method of Claim 1 wherein the tri-axial data measurement or its gradient is selected from the group consisting of:

i.   geomagnetic,

ii.   fluid flow,

    iii.   gravitational,

    iv.   surface, and

    v.   electro-magnetic field (inclusive of polarimetric orientation),

5   **CLAIM 4 (currently amended)**

The tri-axial data measurement of the method of Claims 1 or 3 wherein, said data measurement is collected by means selected from the group consisting of:

    i.   airborne,

    ii.   ground,

10   iii.   borehole, and

    iv.   submarine,

CLAIM 5 (currently amended)

The method of Claims 1, 2 and or 3 wherein the potential use exists for visualization

15   of the orientation and intensity of the remanentremnant vector for events occurring within the study area over geologic times of differing orientations of the earth's magnetic field, allowing for the ability to:

    i)   discriminate different ages of intrusive rock, even if the rock types are identical in composition and magnetic susceptibility,

20   ii)   determine the extent of later thermal aureoles above the Currie or Ne'el temperature of the constituent ferromagnetic minerals of the rock being measured,

    iii)   discriminate some areas of folding and faulting,